IN THE CLAIMS:

Please amend claims 1, 4-6, 8-10, 12-14, 16-18, 20-23, and 25-31; and add new claims 32-43 as follows:

1. (Currently amended) A method of logically erasing contents of a [[CD-RW]] rewritable optical disc in response to an erase command, the [[CD-RW]] rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, the method comprising:

accessing the PMA area in response to the erase command;

detecting and deleting all of the frames containing the track information from the PMA area, thereby logically erasing all of the contents from the program area; and

preserving the frames containing the identification information in the PMA area, so that the [[CD-RW]] rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the [[CD-RW]] rewritable optical disc, wherein the frames containing the identification information are erasable from the PMA area and rewritable to the PMA area.

2. (Previously amended) The method according to claim 1, wherein the step of preserving comprises preserving the frames containing the identification information at a predetermined leading section of the PMA area.

3. (Previously amended) The method according to claim 1, wherein the PMA area is divided into sections by every ten number of frames, and wherein the step of preserving comprises reserving a ten number of frames which contain the identification information into a predetermined section of the PMA area so as to fill the predetermined section.

4. (Currently amended) [[The]] A method ~~according to claim 1, further~~ of logically erasing contents of a rewritable optical disc in response to an erase command, the rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, the method comprising:

accessing the PMA area in response to the erase command;

detecting and deleting all of the frames containing the track information from the PMA area, thereby logically erasing all of the contents from the program area;

preserving the frames containing the identification information in the PMA area, so that the rewritable optical disc can be identified at rewriting thereof even

after all of the contents are logically erased from the program area of the rewritable optical disc; and

[[the step of]] deleting the frames containing the identification information instead of [[the step of]] preserving the frames containing the identification information when the identification information is incapable of identifying the [[CD-RW]] rewritable optical disc.

5. (Currently amended) The method according to claim 1, wherein the step of preserving comprises detecting when the identification information is composed of a code incapable of identifying the [[CD-RW]] rewritable optical disc, and then rewriting the identification information from the code incapable of identifying the [[CD-RW]] rewritable optical disc to a code capable of identifying the [[CD-RW]] rewritable optical disc.

6. (Currently amended) A method of logically erasing contents of a [[CD-RW]] rewritable optical disc in response to an erase command, the [[CD-RW]] rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, the method comprising:

accessing the PMA area in response to the erase command;

detecting where the frames containing the identification information are located at a leading section of the PMA area and the frames containing the track

information are located in a subsequent section of the PMA area after the leading section; then

deleting all of the frames which contain the track information from the PMA area, thereby logically erasing all of the contents from the program area; and

preserving the frames which contain the identification information as they are at the leading section of the PMA area, so that the [[CD-RW]] rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the [[CD-RW]] rewritable optical disc, wherein the frames containing the identification information are erasable from the PMA area and rewritable to the PMA area.

7. (Previously amended) The method according to claim 6, wherein the PMA area is divided into sections by every ten number of frames, and wherein the step of preserving comprises reserving a ten number of frames which contain the identification information in the leading section of the PMA area.

8. (Currently amended) [[The]] A method ~~according to claim 6, further~~ of logically erasing contents of a rewritable optical disc in response to an erase command, the rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, the method comprising:

accessing the PMA area in response to the erase command;

detecting where the frames containing the identification information are located at a leading section of the PMA area and the frames containing the track information are located in a subsequent section of the PMA area after the leading section; then

deleting all of the frames which contain the track information from the PMA area, thereby logically erasing all of the contents from the program area;

preserving the frames which contain the identification information as they are at the leading section of the PMA area, so that the rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the rewritable optical disc; and

[[the step of]] deleting the frames containing the identification information instead of [[the step of]] preserving the frames containing the identification information when the identification information is incapable of identifying the [[CD-RW]] rewritable optical disc.

9. (Currently amended) The method according to claim 6, wherein the step of preserving comprises detecting when the identification information is composed of a code incapable of identifying the [[CD-RW]] rewritable optical disc, and then rewriting the identification information from the code incapable of identifying the [[CD-RW]] rewritable optical disc to a code capable of identifying the [[CD-RW]] rewritable optical disc.

10. (Currently amended) A method of logically erasing contents of a [[CD-RW]] rewritable optical disc in response to an erase command, the [[CD-RW]]

rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, the method comprising:

accessing the PMA area in response to the erase command;

detecting where first frames containing the identification information are located at a part of a leading section of the PMA area and where second frames containing the track information are located after the first frames in the PMA area; then

deleting all of the second frames so as to logically erase all of the contents from the program area; and

preserving the first frames in the leading section of the PMA area while filling the leading section by the first frames to complete the leading section, so that the [[CD-RW]] rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the [[CD-RW]] rewritable optical disc, wherein the frames containing the identification information are erasable from the PMA area and rewritable to the PMA area.

11. (Previously amended) The method according to claim 10, wherein the PMA area is divided into sections by every ten number of frames, and wherein the step of preserving comprises reserving a ten number of frames which contain the

identification information into the leading section of the PMA area so as to fill the leading section.

12. (Currently amended) [[The]] A method ~~according to claim 10, further~~ of logically erasing contents of a rewritable optical disc in response to an erase command, the rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, the method comprising:

accessing the PMA area in response to the erase command;

detecting where first frames containing the identification information are located at a part of a leading section of the PMA area and where second frames containing the track information are located after the first frames in the PMA area; then

deleting all of the second frames so as to logically erase all of the contents from the program area;

preserving the first frames in the leading section of the PMA area while filling the leading section by the first frames to complete the leading section, so that the rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the rewritable optical disc; and

[[the step of]] deleting the frames containing the identification information instead of [[the step of]] preserving the frames containing the identification information when the identification information is incapable of identifying the [[CD-RW]] rewritable optical disc.

13. (Currently amended) The method according to claim 10, wherein the step of preserving comprises detecting when the identification information is composed of a code incapable of identifying the [[CD-RW]] rewritable optical disc, and then rewriting the identification information from the code incapable of identifying the [[CD-RW]] rewritable optical disc to a code capable of identifying the [[CD-RW]] rewritable optical disc.

14. (Currently amended) A method of logically erasing contents of a [[CD-RW]] rewritable optical disc in response to an erase command, the [[CD-RW]] rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being divided into a leading section and subsequent sections and being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, the method comprising:

accessing the PMA area in response to the erase command;

detecting where first frames containing the identification information are located at [[a]] one of the subsequent sections of the PMA area and where second frames containing the track information are located in either of the

leading section and the subsequent sections except for that containing the first frames; then

deleting all of the second frames so as to logically erase all of the contents from the program area; and

preserving the first frames in the leading section of the PMA area by copying the first frames from the subsequent sections while deleting the first frames from the subsequent sections, so that the [[CD-RW]] rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the [[CD-RW]] rewritable optical disc.

15. (Previously amended) The method according to claim 14, wherein the PMA area is divided into sections by every ten number of frames, and wherein the step of preserving comprises reserving a ten number of frames which contain the identification information into the leading section of the PMA area so as to fill the leading section.

16. (Currently amended) The method according to claim 14, further comprising the step of deleting the frames containing the identification information instead of the step of preserving the frames containing the identification information when the identification information is incapable of identifying the [[CD-RW]] rewritable optical disc.

17. (Currently amended) The method according to claim 14, wherein the step of preserving comprises detecting when the identification information is composed of a code incapable of identifying the [[CD-RW]] rewritable optical disc, and then rewriting the identification information from the code incapable of identifying the [[CD-

RW]] rewritable optical disc to a code capable of identifying the [[CD-RW]] rewritable optical disc.

18. (Currently amended) A method of logically erasing contents of a [[CD-RW]] rewritable optical disc having a program area and a PMA area in response to an erase command, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing track information for indicating the tracks of the contents recorded in the program area and another kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc, the method comprising:

accessing the PMA area in response to the erase command effective to command an erase of a last track from the program area;

detecting where frames containing the identification information are located at a succeeding section of the PMA area after a preceding section of the PMA area containing frames corresponding to the last track; then

deleting the frames corresponding to the last track from the preceding section so as to logically erase the contents of the last track from the program area; and

preserving the frames containing the identification information in the preceding section of the PMA area by copying the frames containing the identification information from the succeeding section while deleting the frames containing the identification information from the succeeding section.

19. (Previously amended) The method according to claim 18, wherein the PMA area is divided into sections by every ten number of frames, and wherein the step

of preserving comprises reserving a ten number of frames which contain the identification information into the preceding section of the PMA area so as to fill the preceding section.

20. (Currently amended) The method according to claim 18, further comprising the step of deleting the frames containing the identification information instead of the step of preserving the frames containing the identification information when the identification information is incapable of identifying the [[CD-RW]] rewritable optical disc.

21. (Currently amended) The method according to claim 18, wherein the step of preserving comprises detecting when the identification information is composed of a code incapable of identifying the [[CD-RW]] rewritable optical disc, and then rewriting the identification information from the code incapable of identifying the [[CD-RW]] rewritable optical disc to a code capable of identifying the [[CD-RW]] rewritable optical disc.

22. (Currently amended) A method of logically erasing contents of a [[CD-RW]] rewritable optical disc having a program area and a PMA area in response to an erase command, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing track information for indicating the tracks of the contents recorded in the program area and another kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc, the PMA area being divided into sections by every ten number of frames, the method comprising:

accessing the PMA area in response to the erase command effective to command an erase of a last track from the program area;

detecting where a five number of frames containing the identification information are located at a section of the PMA area and where another five number of frames corresponding to the last track are located in the section of the PMA area; then

deleting the five number of the frames corresponding to the last track from the section so as to logically erase the contents of the last track from the program area; and

preserving a ten number of the frames containing the identification information in the section by duplicating the five number of the frames containing the identification information.

23. (Currently amended) The method according to claim 22, further comprising the step of deleting the frames containing the identification information instead of the step of preserving the frames containing the identification information when the identification information is incapable of identifying the [[CD-RW]] rewritable optical disc.

24. (Currently amended) The method according to claim 22, wherein the step of preserving comprises detecting when the identification information is composed of a code incapable of identifying the [[CD-RW]] rewritable optical disc, and then rewriting the identification information from the code incapable of identifying the [[CD-RW]] rewritable optical disc to a code capable of identifying the [[CD-RW]] rewritable optical disc.

25. (Currently amended) A method of logically erasing contents of a [[CD-RW]] rewritable optical disc having a program area and a PMA area in response to an erase command, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing track information for indicating the tracks of the contents recorded in the program area and another kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc, the PMA area being divided into sections by every ten number of frames, the method comprising:

accessing the PMA area in response to the erase command effective to command an erase of a last track from the program area;

detecting where a five number of frames corresponding to the last track are located in a preceding section and another five number of frames corresponding to a track next to the last track are located in the preceding section, and a ten number of frames containing the identification information are located at a succeeding section of the PMA area after the preceding section; then

deleting the five number of the frames corresponding to the last track from the preceding section so as to logically erase the contents of the last track from the program area;

preserving a ten number of the frames corresponding to a track next to the last track in the preceding section by duplicating the five number of the frames corresponding to the track next to the last track; and

preserving the ten number of the frames containing the identification information in the succeeding section as they are.

26. (Currently amended) The method according to claim 25, comprising the step of deleting the frames containing the identification information instead of the step of preserving the frames containing the identification information when the identification information is incapable of identifying the [[CD-RW]] rewritable optical disc.

27. (Currently amended) The method according to claim 25, wherein the step of preserving comprises detecting when the identification information is composed of a code incapable of identifying the [[CD-RW]] rewritable optical disc, and then rewriting the identification information from the code incapable of identifying the [[CD-RW]] rewritable optical disc to a code capable of identifying the [[CD-RW]] rewritable optical disc.

28. (Currently amended) An apparatus for treating contents of a [[CD-RW]] rewritable optical disc, comprising:

a mount that mounts a [[CD-RW]] rewritable optical disc which is optically rewriteable and which has a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area;

an input that inputs an erase command effective to logically erase all of the contents from the program area of the [[CD-RW]] rewritable optical disc;

a pickup that accesses the PMA area of the mounted [[CD-RW]] rewritable optical disc in response to the erase command; and

a controller that controls the pickup to detect and delete all of the frames which contain the track information from the PMA area, thereby logically erasing all of the contents from the program area, and that controls the pickup to preserve the frames which contain the identification information in the PMA area, so that the CD-RW disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the [[CD-RW]] rewritable optical disc, wherein the frames containing the identification information are erasable from the PMA area and rewritable to the PMA area.

29. (Currently amended) An apparatus for logically erasing contents of a [[CD-RW]] rewritable optical disc, comprising:

a mount that mounts the [[CD-RW]] rewritable optical disc having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing track information for indicating the tracks of the contents recorded in the program area and another kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc;

an input that inputs an erase command effective to command an erase of a last track from the program area;

a pickup that accesses the PMA area in response to the erase command; and

a controller that controls the pickup to perform a process including:

detecting where the frames containing the identification information are located at a succeeding section of the PMA area after a preceding section of the PMA area containing the frames corresponding to the last track; then

deleting the frames corresponding to the last track from the preceding section so as to logically erase the contents of the last track from the program area; and

preserving the frames containing the identification information in the preceding section of the PMA area by copying the frames containing the identification information from the succeeding section while deleting the frames containing the identification information from the succeeding section.

30. (Currently amended) A machine readable medium for use in an apparatus having a processor for logically erasing contents of a [[CD-RW]] rewritable optical disc in response to an erase command, the [[CD-RW]] rewritable optical disc being optically rewriteable and having a program area and a PMA area, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc and another kind of frames containing track information for indicating the tracks of the contents recorded in the program area, program code stored on the machine readable medium includes instructions to:

access the PMA area in response to the erase command;

detect and delete all of the frames containing the track information from the PMA area, thereby logically erasing all of the contents from the program area; and

preserve the frames which contain the identification information in the PMA area, so that the [[CD-RW]] rewritable optical disc can be identified at rewriting thereof even after all of the contents are logically erased from the program area of the [[CD-RW]] rewritable optical disc, wherein the frames containing the identification information are erasable from the PMA area and rewritable to the PMA area.

31. (Currently amended) A machine readable medium for use in an apparatus having a processor for logically erasing contents of a [[CD-RW]] rewritable optical disc having a program area and a PMA area in response to an erase command, the program area being recorded with the contents as tracks, the PMA area being recorded with at least two kinds of frames, one kind of frames containing track information for indicating the tracks of the contents recorded in the program area and another kind of frames containing identification information for identifying the [[CD-RW]] rewritable optical disc, program code stored on the machine readable medium includes instructions to:

access the PMA area in response to the erase command effective to command an erase of a last track from the program area;

detect where the frames containing the identification information are located at a succeeding section of the PMA area after a preceding section of the PMA area containing frames corresponding to the last track; then

delete the frames corresponding to the last track from the preceding section so as to logically erase the contents of the last track from the program area; and

preserve the frames containing the identification information in the preceding section of the PMA area by copying the frames containing the identification information from the succeeding section while deleting the frames containing the identification information from the succeeding section.

32. (New) The method according to claim 1, further including a first mode during which the frames containing the identification information are erased from a first position of the PMA area and are then rewritten to the first position of the PMA area.

33. (New) The method according to claim 32, further including a second mode during which the frames containing the identification information are erased from the first position of the PMA area and are then rewritten to a second position of the PMA area, the second position being different than the first position.

34. (New) The method according to claim 6, further including a first mode during which the frames containing the identification information are erased from a first position of the PMA area and are then rewritten to the first position of the PMA area.

35. (New) The method according to claim 34, further including a second mode during which the frames containing the identification information

are erased from the first position of the PMA area and are then rewritten to a second position of the PMA area, the second position being different than the first position.

36. (New) The method according to claim 10, further including a first mode during which the frames containing the identification information are erased from a first position of the PMA area and are then rewritten to the first position of the PMA area.

37. (New) The method according to claim 36, further including a second mode during which the frames containing the identification information are erased from the first position of the PMA area and are then rewritten to a second position of the PMA area, the second position being different than the first position.

38. (New) The method according to claim 14, further including a first mode during which the frames containing the identification information are erased from a first position of the PMA area and are then rewritten to the first position of the PMA area.

39. (New) The method according to claim 38, further including a second mode during which the frames containing the identification information are erased from the first position of the PMA area and are then rewritten to a second position of the PMA area, the second position being different than the first position.

40. (New) The apparatus according to claim 28, being operable in a first mode during which the frames containing the identification information are

erased from a first position of the PMA area and are then rewritten to the first position of the PMA area.

41. (New) The apparatus according to claim 40, being operable in a second mode during which the frames containing the identification information are erased from the first position of the PMA area and are then rewritten to a second position of the PMA area, the second position being different than the first position.

42. (New) The machine readable medium according to claim 30, further including the instructions to implement a first mode during which the frames containing the identification information are erased from a first position of the PMA area and are then rewritten to the first position of the PMA area.

43. (New) The machine readable medium according to claim 42, further including the instructions to implement a second mode during which the frames containing the identification information are erased from the first position of the PMA area and are then rewritten to a second position of the PMA area, the second position being different than the first position.

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